AGRICULTURAL LAND BASE STUDY:

DEVELOPMENT OPPORTUNITIES FOR THE FUTURE

GOVERNMENT PROGRAMS PROMOTING AGRICULTURAL EXPANSION AND INTENSIFICATION

Alberta
Agriculture
Environment
Forestry, Lands and Wildlife
Municipal Affairs
Transportation

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GOVERNMENT PROGRAMS PROMOTING AGRICULTURAL EXPANSION AND INTENSIFICATION

FOREWARD

The Agricultural Land Base Study (ALBS) is an interdepartmental study undertaken by Alberta Agriculture, Environment, Forestry, Lands and Wildlife, Municipal Affairs, and Transportation. The study is designed as a long-range planning tool for future agricultural development and is not an implementation study. This report reviews existing government mechanisms and activities which assist agricultural development in Alberta.

Analysis of these programs will ultimately further our understanding of how Alberta's land and water resources may be more effectively managed to realize the predicted increases documented in the ALB study. Any significant initiative to more effectively manage Alberta's land and water resources for agriculture needs to consider a number of approaches and their impacts, physical and economic, on other resource uses. The Program's document represents one component of the Agricultural Land Base Study. Conclusions can only be drawn in collective consideration of each of the following background reports:

- Agricultural Inventory
- Analysis of Impacts on Other Resources
- Economic and Financial Analysis: Direct Benefits and Costs
- Economic Impact Analysis
- ALBS: Summary Report

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GOVERNMENT PROGRAMS PROMOTING
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INTRODUCTION

Alberta's agricultural land base can be expanded into new areas, and its productivity can be increased by various land and water management techniques. The need for a more comprehensive policy on public and private agricultural resource development has led to the Agricultural Land Base Study (ALBS). The Agricultural Land Base Study is designed to evaluate opportunities for increasing agricultural production through more effective allocation and management of Alberta's land and water resources. The principal objectives of the ALB Study are:

1. to identify the natural resource management options available for expansion and intensification of Alberta's agricultural land base,

2. to identify the geographic distribution and the maximum potential increase in agricultural production achievable through application of the management options,

3. to assess the relative economics of the management options,

4. to evaluate the impact of such management options on other natural resource uses,

5. to identify existing government programs that promote application of the management options.

Numerous government departments regulate, manage and assist in the development of Alberta's land and water resources. In addition, many of these departments administer programs which have a definite influence on the agricultural land base. Objective 5 of the ALB Study consists of a review of existing government programs and activities. The following report, Government Programs Promoting Agricultural Land Expansion and Intensification, summarizes all of the major mechanisms assisting agricultural development in Alberta. Program summaries are restricted to those which directly or indirectly influence the eleven management options evaluated by the ALB Study:

1. Green Area Conversion
2. Irrigation Expansion
3. Drainage
4. Deep Plowing
5. Liming
6. Summerfallow Reduction
7. Range Improvement
8. Prairie Range Conversion
9. Woodland Conversion
10. Saline Soil Reclamation

Resource programs are organized into six discrete categories. Within each category, programs are ranked according to the levels of financial assistance that are directed towards agricultural development. Each individual program summarizes the following pieces of information: program administration, program objectives, program description, relationship to agricultural land expansion/intensification and program size. Although it is recognized that agricultural production can be increased through the development of new technology, the review of agricultural research, and the transfer of existing technology, these activities are not considered within the scope of this study. Accordingly, research and extension programs are not included.

The programs are organized into the following six categories:

1. Planning and Inventory Programs
2. Water Management Programs
3. Public Land Management Programs
4. Transportation Infrastructure Programs
5. Financial Support Programs
   (i) Grants and Cost-Sharing Programs
   (ii) Loan Programs
6. Technical Services

1. PLANNING AND INVENTORY PROGRAMS

(A) RIVER BASIN AND PROJECT PLANNING FOR WATER MANAGEMENT

Administered by: Planning Division, Water Resources Management Services, Alberta Environment

Objective: To provide the necessary planning for effective water resource co-ordination, development and management.

Description: Specific responsibilities of this program include river basin planning, water resources project planning, and benefit-cost analysis and environmental impact assessment of water resource management projects. This program provides both in-house and consultant expertise in planning of for river basins, sub-basins or individual projects. These projects include flood control, drainage and lake stabilization works in northern Alberta, and irrigation and water supply management projects in the south.

River basin planning has been carried out by Alberta Environment since the formation of the department in 1971. Prior to that time, similar, less structured water resources planning was the responsibility of various departments, including the departments of Agriculture and Public Works.

Relationship to Agricultural Land Expansion/Intensification:

Many of the projects planned and constructed under this program produce direct benefits to the agricultural community by providing flood protection to agricultural lands and to draining areas susceptible to inundation, and by ensuring sufficient domestic-stock watering and irrigation water supplies.

Program Size: In 1984-85 this program utilized a total budget of $5.9 million and 50 person-years of labour. An estimated 40 percent of this total or approximately $2 million is allocated towards projects producing significant agricultural benefits.

(B) IRRIGATION PROJECT PLANNING

Administered By: Project Planning Branch, Resource Planning Division, Alberta Agriculture

Objective: To assist Irrigation Districts and the province plan for the rehabilitation, management and development of irrigation systems to improve water conservation and delivery, and to assist the Irrigation Council's administration of the Irrigation Rehabilitation and Expansion Program.

Description: Specific responsibilities which enable this program to meet its objectives include: developing plans for irrigation rehabilitation and development; evaluating project reports for progress, technical suitability and effectiveness; research on materials and devices for use in irrigation rehabilitation and development; and participation in studies related to irrigation development, river basin planning and resource allocation and development.

Further, an irrigation land (Inventory) data base is developed and maintained through the use of aerial photography and other remote sensing techniques. The preceding information and services are provided to Irrigation Districts, consultants and contractors.

Relationship to Agricultural Land Expansion/Intensification:

This program assists the rehabilitation and development of Alberta's irrigation delivery systems.

Program Size: This program has an annual budget of $1.5 million and 34 person years (1985-86). Approximately 80 percent of these resources are directed towards agricultural expansion/intensification, exclusive of pure research and technological transfer activities. From 1982 to 1984, assessed acreage for irrigation within the Irrigation Districts increased by 36 500 acres.

(C) IRRIGATION LAND CLASSIFICATION

Administered By: Land Classification Branch, Resource Planning Division, Alberta Agriculture

Objective: To provide land evaluation and classification services to facilitate agricultural and irrigated lands allocation, development and conservation, and better soil and on-farm water management practices.

Description: This program provides detailed land classification services and advice to Irrigation Council and Alberta Environment. Only lands classified as suitable for irrigation will be approved by Irrigation Council for inclusion in the Irrigation District assessment roll or by Alberta Environment for irrigation water rights. This classification also assists in the planning for irrigation rehabilitation and development projects.

Additional responsibilities include: applied research to improve technical data base needed for land classification and irrigated land management; recommendations for revisions to land irrigability standards as required; and provision of soil laboratory services.

Relationship to Agricultural Land Expansion/Intensification:

This program provides the technical evaluation required to determine if land is suitable for irrigation.

Program Size: This program has an annual budget of $923 000 and 21 person years (1985-86). Approximately 80 percent of these resources are directed towards agricultural expansion/intensification, exclusive of pure research and technological transfer activities. During 1984-85, 553 level II land classifications were performed to support the addition of lands to Irrigation District assessment roles or the

issuance of individual water licences. In the same year, 150 000 acres of level III classifications were completed for planning purposes. This program also manages various Water Resources Commission and Alberta Environment classification projects.

(D) RESOURCE ANALYSIS AND PLANNING SERVICES

Administered By: Land Use Branch, Resource Planning Division, Alberta Agriculture

Objective: To collect and analyze data in support of the department's land and water resource use activities, and through participation in resource planning activities, to encourage the allocation, development, management and conservation of these resources for the long-term benefit of the agricultural sector.

Description: Specific responsibilities include participation in the review of: regional and municipal plans; land use by-laws; integrated resource management plans; river basin and sub-basin plans; and the review of resource development and reclamation plans to effect favourable allocations and management of agricultural land and water resources.

This program is further involved in the collection and analysis of agricultural land and water resource information, characteristics, availability, demand, and other provincial agencies' resource policies, activities and planning programs. This program also assists in the development and review of agriculture's land and water resource use activities and negotiations with agencies which have the mandate to allocate land and water resources.

Relationship to Agricultural Land Expansion/Intensification:

This program provides data and analytical support to Alberta Agriculture's land, irrigation and on-farm water resource expansion/intensification initiatives.

Program Size: This program has an annual budget of $350 000 and seven person years (1985-86). Approximately 75 percent of these resources are directed towards agricultural expansion/intensification, exclusive of pure research and technological transfer activities.

(E) RESOURCE ECONOMIC ANALYSIS AND SERVICES

Administered by: Production and Resource Economics Branch, Economic Services Division, Alberta Agriculture

Objective: To provide resource economic information to policy makers and farmers so that agricultural land and water resources are used in the most economically efficient manner to improve the long-term viability of agriculture, as well as to achieve societal goals.

Description: This objective is achieved through economic research, review of economic reports, policies and programs and interaction with other agencies through interdepartmental committees and interdisciplinary working groups.

Specific research includes economic and social benefit/cost studies of existing and alternative land and water use practices; and of public expenditure on land and water resources used for agricultural production in Alberta. The program provides input to public policies and programs for development and management of land and water resources for agricultural production; and provides information and technical support to farmers, agribusiness, and government agencies in such areas as agricultural real estate and the economic impact of obstacles on farming operations.

Relationship to Agricultural Land Expansion/Intensification:

This program provides the economic analysis and information as related to Alberta Agriculture's initiatives in the area of land and water resource development for agricultural expansion and intensification.

Program Size: The Resource Section of the program has an annual budget of $204 969 and four person years (1985-86). Close to 80 percent of these resources contribute (directly or indirectly), to providing improved information in the area of agricultural land expansion, intensification and improvement.

(F) INTEGRATED RESOURCE PLANNING

Administered By: Resource Planning Branch, Resource Evaluation and Planning Division, Alberta Forestry, Lands and Wildlife

Objective: To optimize use of the provincial publicly owned lands and minerals resource base and achieve maximum benefits for Albertans now and in the future.

Description: The objective is accomplished through shared decision making, co-ordination and co-operation within and between government agencies with resource management responsibilities. Most of the activity related to agricultural land expansion is in sub-regional level plans where appropriate management of resource priorities are determined for the planning area. The program is also involved with agricultural land expansion at the provincial, regional and local levels.

Relationship to Agricultural Land Expansion/Intensification:

This program is related to the expansion of agriculture onto public land , particularly in the Green Area. At the present time, 11 sub-regional plans are being conducted. The sub-regional plans that contain most of the potentially arable land are Keg River; Sturgeon Lake-Puskwaskau East; Brazeau-Pembina; Rocky-North Saskatchewan; and Nordegg-Red Deer River. Jean D'Or Prairie, Big Bend, Frost Hills and Lakeland Integrated Resource Plans have been approved in 1985 and have identified 280 000 acres for agricultural expansion.

Program Size: This program has an annual budget of $1.4 million and 24 person years. Approximately 25 percent of this could be directly attributed to planning activities related to agricultural expansion. Even though some plans are principally concerned with agricultural land expansion (Keg River and Sturgeon Lake-Puskwaskau East), they are

still concerned with the allocation of other resources. Approximately 415 000 acres of potentially arable public land has been identified and could be posted for agricultural expansion in plans recently approved or currently being undertaken. This program is also supported by resource inventory and evaluation activities. In addition, many agencies supply manpower to planning teams for the specific sub-regional planning areas.

(G) CLIMATE INVENTORY PROGRAM

Administered By: Resource Evaluation Branch, Resource Evaluation and Planning Division, Alberta Forestry, Lands and Wildlife

Objective: A major objective of this program is to monitor and evaluate agroclimatic resources in the agricultural fringes of the Peace River region.

Description: The program was initiated in 1979. The program operates a dense climatic network in the Ft. Vermilion-High Level area and one in the Sturgeon Lake-Lesser Slave Lake area. These are short-term (approximately five years) networks monitoring temperature and precipitation. The products from this program will include agro-climatic maps and a provincial climate data base.

Relationship to Agricultural Land Expansion/Intensification:

The program provides resource evaluation data related to expanding agriculture onto public land.

Program Size: The program operates two mesoclimatic networks in the Peace River region of Alberta. Approximately 2.4 person years and $100 000 of the annual budget is attributed to the agricultural component of the program.

(H) FORAGE INVENTORY PROGRAM

Administered By: Resource Evaluation Branch, Resource Evaluation and Planning Division, Alberta Forestry, Lands and Wildlife

Objective: To develop an information base that provides the opportunity for analysis of domestic and wildlife forage potentials on public land.

Description: Initiated in 1978, the program conducts a detailed vegetation inventory including species composition from overstory to mosses and biomass clipping of browse, grasses and forbs. The program provides plant communities or associations for Ecological Land Surveys. In addition to input for Ecological Land Surveys, the program also inventories forage resources in other areas on a project base often at scales up to 1:15 000.

Relationship to Agricultural Land Expansion/Intensification:

This program can provide input to the expansion of unimproved domestic grazing on public land.

Program Size: In 1984-85, between 2 and 2.5 million acres were inventoried at a scale of 1:100 000. Approximately 1.25 person years and $50 000 of the annual budget are directly attributed to the agricultural element of the program.

(I) ECOLOGICAL LAND CLASSIFICATION

Administered By: Resource Evaluation Branch, Resource Evaluation and Planning Division, Alberta Forestry, Lands and Wildlife

Objective: To provide a comprehensive inventory and evaluation of natural resources in Integrated Resource Planning Areas.

Description: The program was initiated in 1969. Ecological Land Surveys were initiated to provide input to sub-regional Integrated Resource Plans. These surveys inventory and map, soil, physiographic, vegetational and climatic attributes of the planning areas. In addition, the capability of the landscape to support various renewable resource activities including agriculture, is also evaluated.

Relationship to Agricultural Land Expansion/Intensification:

These surveys are conducted as part of Integrated Resource Planning projects and incorporate evaluations of agricultural capability on public land.

Program Size: In 1984-85, this program was involved in the evaluation of agricultural capability in the Keg River planning area. The budget was approximately $60 000 along with two person years.

(J) SOIL SURVEY (A.R.C.)

Administered By: Alberta Research Council, Terrain Sciences Department

Objective: Soil surveys are used to generate high quality soils information for government, private industry and individual citizens.

Description: The Council's soil survey activities were initiated in 1928. Soil surveys represent one component of the Council's major research program in the field of Natural Resources Research. Soil surveys further the Alberta Research Council's active promotion of economic development in the province.

Soil surveys may be used to generate information regarding agricultural capability; soil/climate data; problem soils; the potential productivity of soils under different management methods; more effective predictions regarding the impact of resource developments within a municipality; and assisting specific land use decisions for regional planning purposes.

Relationship to Agricultural Land Expansion and Intensification:

Soil survey information may be used to interpret soil units for agricultural capability and to identify problem soils.

Program Size: In 1985-86, the Terrain Sciences Department will allocate approximately $500 000 and eight person years (four professional and four support staff) for soil survey and related research activities. An additional $400 000 and six person years (two professional and four support staff) will be allocated for soil degradation (salinity, erosion) research related to the intensification of agricultural land use.

(K) SOIL SURVEY (C.D.A)

Administered By: Alberta Pedology Unit (Soil Survey), Agriculture Canada

Objective: To resurvey selected areas of Alberta and extend soil survey coverage to new areas with a potential for agriculture or other developments, and to improve the quality and consistence of soil classification, mapping, correlation and interpretation.

Description: The Alberta Pedology Unit recognizes soil/land resource inventories as a base for land use and land management interpretations. Interpretive and/or applied research is undertaken in support of a variety of uses, including erosion potential, aridity indices, capabilities for dryland and irrigated agriculture; crop yield relationships; planning; and specific pedological problems.

Relationship to Agricultural Land Expansion/Intensification:

Soil survey information may be used to interpret soil capability for agriculture (dryland and irrigated) and to identify specific pedological problems. In addition, it provides a base for extending new programs or technologies (e.g. deep plowing).

Program Size: The Alberta Pedology Unit has an annual budget, including salaries, of approximately $400 000 and nine person years (six professional and three support staff).

2. WATER MANAGEMENT PROGRAMS

(A) IRRIGATION HEADWORKS AND MAIN IRRIGATION SYSTEMS IMPROVEMENT

Administered By: Design and Construction Division, Water Resources Management Services, Alberta Environment

Objective: To expand Alberta's water resource and irrigation development program in southern Alberta as part of the government's commitment to balanced growth throughout the province, and to ensure water delivery to irrigation districts and other multi-purpose water users.

Description: Project work includes: design and construction of canal improvements and diversion structures, rehabilitation of existing canals and structures, acquisition of related equipment, enlargement or development of off-stream storage reservoirs, and development of internal storage reservoirs.

Relationship to Agricultural Land Expansion/Intensification:

This program will produce significant benefits to irrigated agriculture by providing a secure water supply to existing acreage and allowing for the future expansion of irrigated acreage.

Program Size: This program was initiated in 1975 and originally designed to be a ten year program with total funding of $200 million, $110 million to be spent by Alberta Environment. The program was revised in 1980, after the Department of Environment had spent $9.0 million of its allocation. The revised program involved an expenditure of $334 million (1980 dollars) of Heritage Savings Trust Fund, $234 million to be spent by Alberta Environment. Environment's total is to finance a 15-year program and is allocated as follows:

i.	Canal and headworks improvements	$150 million
ii.	Off-stream storage	57 million
iii.	Internal storage	17 million
iv.	Special projects	10 million

Provincial projects receive 100 percent financing through this fund, while works that are owned by irrigation districts are financed up to the costs of any necessary land acquisition. No person years have been estimated for this program.

(B) MAJOR WATER MANAGEMENT PROJECTS

Administered By: Design and Construction Division, Water Resources Management Services, Alberta Environment

Objective: To finance and construct major water management and control projects which provide widespread benefits to a large area of the province.

Description: Projects eligible under this program include: water supply, storage and distribution, drainage, flood and erosion control, lake level stabilization, recreation, low flow augmentation, and fish and wildlife habitat enhancement. The Department of Environment assumes responsibility for all aspects including engineering, land acquisition, construction, and operation and maintenance. The department reserves the right, by agreement, to assign certain aspects or a portion of the costs to the benefiting local authorities.

Relationship to Agricultural Land Expansion/Intensification:

Many of the projects constructed under this program include flood control, drainage and lake stabilization structures which allow farmers to cultivate large areas of land which may otherwise have been useless due to excess water problems.

Program Size: Budgets for this program vary greatly from year to year depending upon the nature and magnitude of projects constructed. Recently completed projects include the Paddle River flood control dam at a cost of $41 million, the Namepi-Kennedy Creeks flood control project at a cost of $8.2 million, and the Lesser Slave Lake Stabilization project at a cost of $3 million. Work on these projects involves engineering consultants and a number of divisions within the department and, therefore, no estimate of person years can be given. This is a long-standing and on-going water resource management and development program.

(C) OPERATION AND MAINTENANCE OF IRRIGATION HEADWORKS SYSTEMS

Administered By: Irrigation Headworks Branch, Operation and Maintenance Division, Water Resources Management Services, Alberta Environment

Objective: To operate and maintain the provincially-owned irrigation headworks systems which directly serve irrigation districts and other water users in southern Alberta.

Description: This program has been in effect since 1974 and provides for the day-to-day operations, ongoing maintenance and upgrading of the irrigation headworks systems in order to ensure the delivery of water to the various irrigation districts served by these systems. Much of the work involves canal bank stabilization, seepage control and rehabilitation of related structures and controls.

Relationship to Agricultural Land Expansion/Intensification:

The operation of most of the irrigation districts is dependent on the water supplied through the headworks operated under this program. Continued preventative maintenance, upgrading and rehabilitation of the irrigation headworks system is vital to ensure the required supply of water to the districts.

Program Size: During the 1984-85 fiscal year, this program utilized a budget of $2.0 million of Heritage Savings Trust Fund financing and $2.4 million from general funds. No person years have been estimated for this program.

(D) WATER RIGHTS LICENSING (CONSUMPTIVE USE)

Administered By: Surface Water Rights Branch, Ground Water Rights Branch, Water Resources Administration Division, Water Resources Management Services, Alberta Environment

Objective: To review applications and,if approved, grant licenses to divert and use surface water and groundwater with the intent of protecting the source of supply and the rights of other users.

Description: Licensing requirements date back to the early 1890s when they were administered by the federal government and since 1931 have been ensconced in the Water Resources Act. A license under the Act is required for any diversion or impoundment of water. The applicant must make a submission describing the purposes for which water will be used and the means of diversion or impoundment. After review of the applications by relevant government departments or agencies, the terms and conditions of the license are set and an interim license issued. After construction, the works are inspected and a final license issued by the Water Rights Branch.

Alberta Agriculture's Irrigation Branch inspects proposed sites and submits an "Agricultural Feasibility" report regarding the land's physical suitability.

Relationship to Agricultural Land Expansion/Intensification:

Agricultural uses account for the majority of water licenses issued, the primary benefit to the farmer being protection from the indiscriminate actions of a neighbour, and ensuring a secure water supply for future agricultural development.

Program Size: At present, 9 253 active agricultural water licenses are on file as well as 1 285 drainage and flood control licenses, many of which are also agricultural. In comparison, all other sectors combined total only 3 035 active licenses. The total budget for licensing activities in the province in 1984-85 was $1.7 million, which includes a manpower component of 38 person years. The preceding person year estimates are for professional person years only and exclude support person years.

(E) WATER RIGHTS LICENSING (NON-CONSUMPTIVE USE)

Administered By: Regional Services Branch, Water Resources Administration Division, Water Resources Management Services, Alberta Environment

Objectives: To review applications and provide approvals under the Water Resources Act for projects of the following type: drainage, channel realignment and improvement, stream crossings (pipeline, bridges), boat launches and erosion protection works. Approvals are also issued for temporary water uses (oil well drilling, emergency water supplies).

Description: When a project is proposed, the owner or his agent submits an application to the appropriate regional office. The application is reviewed to determine if approval can be granted. If in order, approval is granted with appropriate terms and conditions. A license is issued for projects which involve drainage or channel improvement. A permit is issued for projects such as stream crossings. Letters of authority are issued for temporary water use.

Relationship to Agricultural Land Expansion/Intensification:

A large number of licensed projects (approximately 70 percent) involve agricultural lands. The projects include drainage and flood control for agricultural land. The approval process allows projects to be undertaken in an orderly manner with limited impact on other agricultural lands and other interested groups.

Program Size: No budget is allocated specifically for the program, manpower and other costs being provided within each regional Water Resources office's operating budget. It is estimated that in the 1984-85 fiscal year, approximately 14 person years were dedicated to this program. The preceding person year estimates are for professional person years only and exclude support person years.

(F) DRAINAGE DISTRICTS ADMINISTRATION

Administered By: Administrative Support Branch, Water Resources Administration Division, Water Resources Management Services, Alberta Environment

Objective: To administer the Drainage Districts Act and to advise each Drainage District Board of Trustees on the conduct of its affairs.

Description: The original Drainage Districts Act was passed in 1921 and has since undergone only minor revisions. The Drainage Districts Act allows a group of landowners to form a drainage district to deal with widespread and persistent drainage problems. The district is run by an elected Board of Trustees consisting of representatives for the affected area. The board undertakes construction of the required drainage works and is eligible to receive financial assistance from Alberta Environment under the cost sharing program described in Positon Paper #5. The board is also responsible for operating and maintaining the works and constructing new facilities as required.

Relationship to Agricultural Land Expansion/Intensification:

Although the Drainage Districts Act has not been used in some time, nine drainage districts are still in existence in the province, and applications for the formation of two new districts are currently being processed by the department. Each district has developed a network of main and secondary drains to service its area which, according to area farmers, has been very effective in dealing with their water problems.

Program Size: A total of nine drainage districts are administered under this program. Each district levies a drainage tax against landowners within its boundaries to finance its day-to-day expenses. The districts are also eligible to receive cost-sharing financial

assistance from Alberta Environment for structures within the district and can receive 100 percent provincial funding for the construction of ditches from the district boundary to a suitable outlet. Administration of the districts requires part of the time of three professionals. The preceding person year estimates are for professional person years only and exclude support person years.

(G) OPERATION AND MAINTENANCE OF PROVINCIAL WATER MANAGEMENT PROJECTS

Administered By: Projects Management Branch, Operation and Maintenance Division, Water Resources Management Services, Alberta Environment

Objective: To operate and maintain the provincially owned water management projects throughout the province.

Description: This program provides for the day-to-day operations, ongoing maintenance and upgrading of water resources projects in order to ensure adequate drainage, flood protection, municipal, industrial and livestock water supplies, lake stabilization and recreational facilities associated with the projects. In addition, sub-programs such as Emergency Water Pumping and Emergency Streamflow Maintenance, assist communities suffering from an excess or deficit of water and provide a mechanism for dealing with water course blockages which threaten public safety and structural damage to private property.

Much of the work involves canal and ditch bank stabilization, dyke and erosion control repair works, preventative and remedial maintenance of related structures and controls.

Relationship to Agricultural Land Expansion/Intensification:

The expansion of agricultural land use areas is highly dependent upon the provision of adequate drainage facilities. Livestock producers in turn, rely upon a source of water supply not naturally available without the operation of some of the water resource projects.

Continued preventative and remedial maintenance, system upgrading and structure operation is vital to ensure adequate drainage facilities and the required supply of water to the agricultural communities.

Program Size: During the 1984-85 fiscal year, this program utilized a budget of $2.7 million from general funds. This is a long-standing and ongoing water resources management program. No person years have been estimated for this program.

(H) OPERATION AND MAINTENANCE OF THE SHEERNESS AND DEADFISH WATER SUPPLY SYSTEMS

Administered By: Special Projects, Operation and Maintenance Division, Alberta Environment

Objective: To operate and maintain the provincially owned pumps, canals, reservoirs, and natural channels which supply water from the Red Deer River for irrigation and domestic use along the Berry, Deadfish, and Bullpound Creeks in the Special Areas.

Description: The department's commitment in 1981 to assist farmers and ranchers in the drought prone Special Areas resulted in construction of the Deadfish pumphouse, pipeline and channel; agreement with Alberta Power Limited to obtain water by way of the Sheerness Pipeline, and construction of the Blowdown Canal. These systems, which became fully operational in 1985/86, provide an assured water supply adjacent to the projects and through approximately 170 km. of natural channel. Operation of the pumping facility at the Red Deer River, and the gates of various storage reservoirs is required to ensure the timely delivery of irrigation and domestic water supplies. Maintenance involves repairs to the concrete canal, dam spillways and control gates, weed control, and debris removal from the natural channel.

Relationship to Agricultural Land Expansion/Intensification:

Historically, irrigation in the Special Areas has been extremely limited due to a shortage of water supplies. Operation of the Sheerness and Deadfish projects will allow annual production on existing licensed acreage and provides water supply capabilities for up to 14 000 additional acres adjacent to the systems.

Program Size: Expenditures for the first year's operation and maintenance of the systems are anticipated to be approximately $250 000, increasing annually as additional acreage is brought into production under irrigation.

3. PUBLIC LAND MANAGEMENT PROGRAMS

(A) GRAZING RESERVE DEVELOPMENT, HERITAGE SAVINGS TRUST FUND

Administered By: Land Management and Development Branch, Public Lands Division, Alberta Forestry, Lands and Wildlife

Objective: To expand or develop new grazing reserves in the gray wooded soil zones of central and northern Alberta.

Description: In 1976, under the Heritage Savings and Trust Fund program, $26 million was provided for grazing reserve development. Funding for the program was subsequently increased to $40 million. The developments are planned through the Integrated Resource Planning program with involvement by the Resource Evaluation and Planning Division, Fish and Wildlife Division, Alberta Agriculture and other agencies. Development involves the clearing of aspen brush land and the establishment of tame forage. Fences and corrals are built to handle and control livestock. All development is carried out by private contractors and is expected to be completed in 1988.

Relationship to Agricultural Land Expansion/Intensification:

This program has contributed to an expansion and intensification of the agricultural use of public land.

Program Size: In 1984-85, $3.9 million was spent on Grazing Reserve development and improvement on 13 reserve sites. To date, 86 079 acres have been seeded to tame forage under this program. Total expenditures to March 31, 1985 are $28 million.

(B) PROVINCIAL GRAZING RESERVES PROGRAM

Administered By: Land Management and Development Branch, Public Lands Division, Alberta Forestry, Lands and Wildlife

Objective:

1. To provide affordable summer pasture for the livestock of small, beginning farmers and ranchers.
2. Grazing Reserves also accommodate other land uses, including recreational opportunities.

Description: Cattle are pastured on reserves pursuant to the Head Tax Grazing Permit Regulations. Grazing reserve staff care for the patrons' animals while they are on the reserve. This includes rotating the herds, veterinary care, salting and fence maintenance. The patrons of each grazing reserve form a Grazing Association and act in an advisory role and assist the Public Lands Division in the operation of the reserve.

Relationship to Agricultural Land Expansion/Intensification:

Grazing reserves are generally located on poor quality agricultural soils. By providing land on which livestock can be grazed during the summer months and thus freeing privately owned land for crop production, the grazing reserve program helps to difersify and stabilize agricultural economics in these areas of relatively poor soil.

Program Size: There are 32 grazing reserves in the province which provided 255 000 Animal Unit Months (A.U.M.s) of grazing in 1984-85 for the livestock of 1 570 patrons. Grazing Reserve development and operating costs were $4.2 million through regular funding in 1984-85.

(C) PUBLIC LAND DISPOSITIONS

Administered By: Public Lands Dispositions Branch, Public Lands Division, Alberta Forestry, Lands and Wildlife

Objective: To issue and administer dispositions on public lands for agriculture and other uses.

Description: There are three ways in which public land is identified for agricultural disposition:

- an individual can apply for an agricultural type disposition on vacant public land which automatically triggers an evaluation of the land for that use and disposition;
- due to local demand, blocks of vacant public land are evaluated to determine their suitability for agricultural production. If found suitable, they are surveyed and made available for agricultural dispositions;
- land suitable for agricultural expansion is identified through integrated resource plans.

The four methods of allocating public land for agricultural dispositions are:

- posting the land available, receiving applications and awarding the land on the basis of need to form an economic farm unit;
- posting the land available for application, evaluating the applicants for eligibility and awarding the land to eligible applicants by a public draw system;
- advertising the land for public auction;
- posting the land available for bids by sealed tender.

Land is posted for applications following on-site inspection, referrals to other interested agencies and an assessment of

access. The types of dispositions available for agricultural use include:

- Farm Development Sales;
- Farm Development Leases;
- Cultivation Permits;
- Grazing Leases (five and ten year leases);
- Grazing Permits (annual);
- Head-Tax Grazing Permits;
- Hay Permits;
- Forest Grazing Licenses.

Grazing leases can be converted to farm development and homestead leases with or without option to purchase upon the request of the holder of the lease. Grazing land may be sold subject to a number of criteria, terms and conditions.

Relationship to Agricultural Land Expansion/Intensification:

New land opened for agriculture is delivered through the Public Land Dispositions Branch.

Program Size: During 1984-85, 912 quarter sections were posted for agriculture. Between 5 000 and 42 000 acres of new agricultural land have been opened annually over the last five years. The Farm Land Section has an annual budget of $581 000 and 22 person years, the Grazing Section's annual budget is $437 000 and 17 person years (1985-86).

(D) FOREST RANGE MANAGEMENT

Administered By: Forest Land Use Branch, Alberta Forest Service, Alberta Forestry, Lands and Wildlife

Objective: To administer and manage the use of rangelands in the Rocky Mountain Forest Reserve and the Green Area portion of the province. To co-ordinate the range improvement program and the pesticide application program for the indicated area.

Description: This program administers grazing allotments, leases, permits, and head tax permits in the Rocky Mountain Forest Reserve, and forest grazing licenses in the remainder of the Green Area. The program is also responsible for range management planning, range survey work, preparing range inputs for resource management plans, co-ordination of pesticide use, and assisting forestry staff regarding range management training and providing range expertise.

Relationship to Agricultural Land Expansion/Intensification:

Responsible for ensuring proper use of the available grazing areas having potential for domestic grazing. They are also responsible for compatible development of improved grazing areas within the Green Area.

Program Size: A total of 25 000 head of mature stock graze on the Rocky Mountains Forest Reserve in 91 allotments. An additional 656 000 acres is grazed under 536 dispositions in other portions of the Green Area. The program has a budget of approximately $500 000 and 6.5 person years. This includes some money from the Range Improvement Program and the Heritage Savings Trust Fund. An additional $500 000 is provided under the Public Lands Range Improvement Program for improvement of Green Area dispositions outside of the Rocky Mountains Forest Reserve.

(E) BUCK FOR WILDLIFE PROGRAM

Administered By: Habitat Branch, Fish and Wildlife Division, Alberta Forestry, Lands and Wildlife

Objective: To protect, enhance and develop wildlife habitat. Agricultural expansion and intensification are not primary objectives of the Buck for Wildlife Program.

Description: Some Buck for Wildlife projects can increase stocking and forage productivity on public land grazing dispositions through funding for cross fencing and the encouragement of rest/rotational grazing. The establishment of grass/legume nesting cover plots are also available to agricultural users for hay purposes on several projects (eg. Buffalo Lake, Bigelow Reservoir). In some cases, Buck for Wildlife projects accommodate agricultural use on land not previously used for agriculture because grazing can play a role in maintaining certain species and the vitality of some forages for both wildlife and domestic cattle. Most wildlife reservations on public land allow agricultural development and they can encourage Buck for Wildlife projects to develop new grazing or enhance present grazing utilization of this land.

Relationship to Agricultural Land Expansion/Intensification:

Public land otherwise withheld from agricultural development can be developed for agricultural use if a Buck for Wildlife project is established. In some cases, domestic grazing on Buck for Wildlife projects can increase stocking rates and forage productivity.

Program Size: In 1985-86, approximately $1.5 million are committed to Buck for Wildlife projects. Less than 10 percent of this would be directly related to increased productivity on agricultural land.

(F) ACCELERATED LAND SALES

Administered By: Land Management and Development Branch, Public Lands Division, Alberta Forestry, Lands and Wildlife

Objective: To increase the supply of suitable public land for agricultural uses.

Description: The Accelerated Land Sales program was initiated in 1981 to provide an initiative to find large blocks of suitable public land for agriculture. The conventional methods of applications and postings were being restricted by dwindling areas of suitable land adjacent to existing farm communities and increased land use pressures for this land. Areas of potential suitability are identified through agency consultation within Energy and Natural Resources and candidate areas are then inventoried by private consultants.

Relationship to Agricultural Land Expansion/Intensification:

The major portion of this increase in dispositions will come from public land that is not presently under an agricultural disposition.

Program Size: The goal is to inventory 100 000 acres of public land annually for the next few years. In 1984, 109 000 acres were inventoried through contract. The cost of this program was about $65 000.

(G) TAX RECOVERY LAND SALES PROGRAM

Administered By: Special Areas Board, Municipal Affairs

Objective: To provide lessees of public land in the Special Areas with tenure by selling public land presently under lease.

Description: This is a 10-year program, initiated July 1, 1981 whereby leaseholders may purchase up to $8 000 of the assessed productive value of tax recovery land based on the 1978 assessment manual. The program also permits a bonafide farmer,son or daughter, actively engaged in farming before July 1, 1981 to purchase an additional $8 000 of productive value assessment. The program is focused on the sale of cultivated land, but a portion of the land sold can be grazing land which may be brought under cultivation in the future. Individuals must purchase at least 50 percent of their cultivation lease lands prior to the purchase of any grazing lease lands. Applications for sale are referred to the Fish and Wildlife Division of Alberta Energy and Natural Resources, and the Special Areas Board maintains the right to withhold land deemed inapproriate for sale such as river frontage, public usage, commercial, water sources, gravel pits and so on.

Relationship to Agricultural Land Expansion/Intensification:

This program promotes intensification under private ownership. Some of the lands sold are presently under grazing leases but following sale may be cultivated.

Program Size: Up to December, 1984, a total of 409 000 acres of tax recovery lands were sold at an average of four quarter sections per applicant. An additional 40 000 acres were sold from January to August, 1985. A review of the Tax Recovery Land Sales program will be conducted in 1986 to determine the amount of land broken for cultivation during 1981-1985 and to assess opportunities for program extension.

(H) METIS SETTLEMENT PROGRAMS

Administered By: Metis Development Branch, Municipal Affairs

Objective: To expand and intensify agriculture on Metis settlements.

Description: Most of the department's initiatives on the settlements are joint ventures with individual settlements, agricultural committees, or cattleman's associations.

Funds have been used to support the development of a wildlife ranch in Kikino and the development of a community owned farm in Elizabeth. The settlements also use a portion of their yearly operating grant for agricultural land development.

Relationship to Agricultural Land Expansion/Intensification:

Funds provided are used to bring new land into production and for better utilization of existing lands.

Program Size: This program has been reducing its direct financial involvement in specific agricultural development projects.

4. TRANSPORTATION INFRASTRUCTURE PROGRAMS

(A) GENERAL TRANSPORTATION, CONSTRUCTION AND MAINTENANCE PROGRAMS WITHIN RURAL ALBERTA

Administered By: Regional Transportation Division, Alberta Transportation

Objective: To provide funding for necessary construction and maintenance activities on certain public roads within the province, to ensure the reliable and safe accommodation of all modes of traffic.

Description: The following ongoing programs provide this funding:

a. Primary highway construction and maintenance program for the 13 500 km of provincial highways.
b. Construction and maintenance programs for the 2 000 km of secondary roads and 16 200 km of local roads in the 14 improvement districts.
c. Construction grant programs for the 11 700 km of secondary roads and 104 000 km of local roads within the counties, municipal districts and special areas.

Relationship to Agricultural Land Expansion/Intensification:

These programs provide direct and indirect benefits for existing agricultural development and the expansion of agricultural land in isolated areas of the province through the provision of the necessary road infrastructure.

Program Size: A total of $590 million will be spent on these programs in 1985-86. This represents approximately 68 percent of the total transportation budget.

(B) ROADS TO NEW LANDS

Administered By: Regional Transportation Division, Alberta Transportation

Objective: To provide funding for road construction required to service new lands posted for agricultural use by the Department of Energy and Natural Resources, Public Lands Division.

Description: Upon identification of the specific lands to be posted in an upcoming fiscal year, the Public Lands Division submits a priority listing of access projects to Alberta Transportation. This request is reviewed and considered within the normal demands of the improvement district general construction funds and other special priority projects. The funding levels for access roads varies from year to year, depending on the access requirements to posted lands.

Relationship to Agricultural Land Expansion/Intensification:

The provision of roads to these lands is an integral part of the agricultural expansion. No new lands are posted without adequate access or a commitment to provide access.

Program Size: Approximately $2 million has been available for roads to new lands annually.

(C) IRRIGATION BRIDGES

Administered By: Regional Transportation and Engineering Divisions, Alberta Transportation

Objective: To provide funding for the reconstruction and repair of structurally deficient bridges over irrigation canals and ditches.

Description: In consultation with local road authorities and irrigation districts, Alberta Transportation undertakes inspections of bridges over irrigation canals and ditches and carries out priority replacements and repairs with available departmental funding. These bridges were originally the responsiblity of the Irrigation Districts. Alberta Transportation inspects the bridges. Those structures determined to be adequate are transferred to the local road authority. Bridges found to be structurally deficient are reconstructed or repaired and then transferred to the road authority. A total of 1 255 bridges are affected by this program.

Relationship to Agricultural Land Expansion/Intensification:

These bridges are located on local road systems, in high intensity agricultural areas which support the areas' agricultural programs.

Program Size: The program expenditure in 1985-86 for the improvement of 36 bridges is $1 200 000. It is expected that similar improvements will be possible in 1986-87.

5. FINANCIAL SUPPORT PROGRAMS

(i) Grants and Cost-Sharing

(A) IRRIGATION REHABILITATION AND EXPANSION PROGRAM

Administered By: Irrigation Council, Alberta Agriculture

Objective: To assist irrigation districts in the planning, rehabilitation and expansion of irrigation distribution systems to ensure an efficient, assured supply of water to irrigation farmers.

Description: This cost-sharing program allocates assistance based on the following formula: 86 percent of costs funded by province and 14 percent funded by the irrigation district in which the project is located. Funds are allocated proportionately to the districts on the basis of assessed acres and water rate charges.

Types of projects include structure replacement on canals, canal and lateral relocation and/or rehabilitation, seepage control, pipelines, reservoir projects and system enlargements. This program has been funded by Alberta Herigate Savings Trust Fund since 1976. Program and cost- sharing formula are subject to renewal after March, 1990.

Relationship to Agricultural Land Expansion/Intensification:

Canal capacities are increased and extended to allow additional acres of land to be serviced. Canals are being lined or curtained to reduce seepage and reclamation of salinized lands; and pipelines are being installed to bring additional land into production. Internal storage reservoirs are constructed increasing the capacity of the distribution systems to service more acres.

Program Size: Provincial grants for the period from 1975-76 to 1985-86 have totalled $178.8 million. 1985-86 grants totalled $29.8 million.

(B) COST SHARED WATER RESOURCE MANAGEMENT PROJECTS
(POSITION PAPER #5)

Administered By: Regional Services Branch, Water Resources Administration Division, Water Resources Management Services, Alberta Environment

Objective: To cost-share with local authorities on water resource management projects from which direct public benefits accrue.

Description: Any local authority with a water problem may approach the department for assistance. After an inspection is made, the local authority is advised if the project is of the type eligible for financial assistance. The following are the types of projects that may be eligible: flood control and drainage, flow regulation, erosion control, water based recreation, fish, waterfowl and wildlife enhancement. Projects must be in the public interest, have a demonstrated need, and be initiated by a local authority.

If a project appears eligible, the local authority, usually through a consultant, prepares a feasibility report including design, cost estimate, and environmental assessment. The feasibility report is then submitted to Alberta Environment for approval of cost-sharing.

Once the feasibility report is approved and approval under the Water Resources Act is obtained, the local authority constructs the project. The department provides a grant to the local authority for 75 percent of the capital construction and engineering costs. Operation and maintenance costs are then the responsibility of the local authority.

This program had its unofficial beginning in the mid 1960s when the provincial government began cost-sharing on water management projects on a 50/50 basis. In 1972 the first official statement of policy was made with the release of Position Paper Number 5, which was revised in 1980 to the policy described above.

Relationship to Agricultural Land Expansion/Intensification:

This program is used extensively by local authorities to provide assistance for solving water problems on farm land. The program is also used by urban local authorities for assisting with urban drainage and flooding problems.

Program Size:

This program presently utilizes an annual budget of approximately $6 million which is distributed equitably across the province. This is an ongoing water resource management program which cost-shared 82 projects in the 1983-84 fiscal year.

Approximately 80 percent of the budget is utilized for projects which solve surface water problems on agricultural lands. No person years have been estimated for this program.

(C) RURAL WATER DEVELOPMENT PROGRAM (P.F.R.A.)

Administered By: Soil and Water Conservation Branch, Prairie Farm Rehabilitation Administration, Government of Canada

Objectives: To assist individuals and rural groups throughout the prairie provinces financially and technically in the development of dependable water supplies for domestic, stockwatering, municipal and irrigation uses.

To encourage a standard for water development projects on the prairies which will lessen the vulnerability to drought periods.

Description: The applicant must be a bonafide farmer or rancher and the project must be located on a bonafide farm or ranch. Projects eligible for assistance include stockwatering dams and dugouts, water well drilling, small-scale private irrigation projects, and as of April 1, 1965, individual project developments within organized irrigation districts.

Upon application to the Prairie Farm Rehabilitation Administration, technical assistance is provided at no charge to locate, survey, design and inspect water source development projects. Funding of one-third of eligible costs is provided by Prairie Farm Rehabilitation Administration up to a maximum of $1 650 per applicant for stockwatering dams, dugouts and wells, and $2 200 per applicant for irrigation projects. For group projects initiated by a legally associated group of five or more farmers, rural municipalities, or Indian Reserves, 50 percent of costs are funded by Prairie Farm Rehabilitation Administration to a maximum of $15 000. Most of the group projects constructed are related to irrigation, while the majority of individual projects receiving assistance were water wells.

This program has its origins in the original Prairie Farm Rehabilitation Act passed in 1935 and has been in operation in some form since that time.

Relationship to Agricultural Land Expansion/Intensification:

In 1981-82 this program provided assistance to 3 500 projects. The program provides a valuable source of funding and technical assistance in developing on-farm water sources. In light of the fact that water supply is a major limiting factor in agriculture in much of southern Alberta, this program is of major importance in future agricultural intensification and expansion.

Program Size: Rural Water Development Expenditures in Alberta:

	1983-84		1984-85	
	NUMBER	FINANCIAL ASSISTANCE	NUMBER	FINANCIAL ASSISTANCE
Dugout	652	$ 549 450	700	$ 520 087
Stockwatering Dams	42	31 674	60	49 665
Irrigation Schemes	46	93 528	49	101 382
Wells	2060	1 661 890	2219	1 840 787
Other Sources	17	15 779	36	28 588
TOTAL	2817	2 352 321	3064	2 540 509

(D) NORTHWEST ALBERTA EROSION CONTROL PROGRAM

Administered By: Regional Services Branch, Water Resources Administration Division, and Projects Management Branch, Operation and Maintenance Division, Water Resources Management Services, Alberta Environment

Objective: To provide cost-sharing assistance to local authorities in the erosion susceptible areas of the province (northwest Alberta) for the construction of new water control projects, the rehabilitation of existing projects and the operation and maintenance of these projects.

Description: This program was initiated in 1978 as a special policy under Position Paper #5. The program operates in a similar manner to the previously described cost-sharing program except that the province will provide all the engineering and technical assistance required by the local authorities, and the province will pay 75 percent of future operation and maintenance costs. Projects eligible for assistance under this program must be located in northwestern Alberta and must be designed to handle moving water (drainage, flood control, erosion control).

Relationship to Agricultural Land Expansion/Intensification:

This program provides supplementary funding to local authorities in the Peace Region for the repair of flood damaged and erosion causing drainage projects. In this way the program reclaims erosion damaged agricultural land and serves to protect other areas from erosion and flood damage.

Program Size: Funding for new projects under this program is contained in the cost-shared program described previously, while the operation, maintenance and rehabilitation of old projects was funded with a $600 000 budget in 1985-86. The program requires approximately 15 person years of labour annually. The preceding person year estimates are for professional person years only and exclude support person years.

(E) RANGE IMPROVEMENT ASSISTANCE PROGRAM

Administered By: Land Management and Development Branch, Public Lands Division, Alberta Forestry, Lands and Wildlife

Objective: To provide incentive to grazing disposition holders who wish to improve production or utilization of the range resource. Such improvements include clearing, piling, breaking, working down, seeding, fencing, stock trail development, water development, and control of brush encroachment.

Description: Holders of grazing dispositions can apply for one or more of the following range improvement programs:

1. Department Funded Programs

   Cost Shared Program - Approved applicants fund improvements up to 50 percent of the cost. Alberta Forestry, Lands and Wildlife funds the remaining to a maximum of $150 per acre. Half of the portion paid for by the applicant will be credited against future grazing disposition rental charges. Increased tenure is awarded to the lessee, depending on amount invested in the program.

   100 percent Department Funded Program - Approved projects are funded 100 percent up to a maximum of $22 000. This program can become a maintenance type program where brush encroachment, or any other significant resource problem, occurs on a lease or permit area.

2. Indirectly Funded Programs

   50 percent Rental Credit Program - Applies a 50 percent credit to the rental account of the disposition holder for costs incurred in completing range improvement projects.

Rental Exemption Program - The program waives the rental payment for a period on forage producing lands cleared and/or broken and seeded to tame forage. The disposition holder may also be permitted to grow up to five cereal or oilseed crops on the area without additional rental payments in excess of the original grazing disposition rental.

Relationship to Agricultural Land Expansion/Intensification:

This program provides for the intensification of grazing on public land.

Program Size: In 1984-85, 213 range improvement agreements were approved along with ongoing grazing association assistance. This program is supported by a $4.8 million budget and 17 person years.

(F) AGRICULTURAL LIME FREIGHT ASSISTANCE PROGRAM (A.L.F.A.)

Administered By: Soils Branch, Plant Industry Division, Alberta Agriculture

Objective: To assist farmers in acid soil areas with the cost of lime or marl transportation, and to develop a provincial agricultural lime industry.

Description: This program was established in June 1981. The program provides a grant of 80 percent of the cost of transporting marl or agricultural lime in excess of $5.50 per tonne to a maximum of $15 000 (maximum assistance is fixed during any one fiscal year). Assistance is also available to producers using their own vehicles (70 percent of the maximum commercial rates).

Lime requirement tests were introduced in 1984. Test reports must show that the soils are acidic (pH less than 6.1) to qualify for assistance.

Relationship to Agricultural Land Expansion/Intensification:

Provides financial support to farmers with acid soils thereby increasing land productivity of cultivated and potential arable lands.

Program Size:

	1982-83	1983-84	1984-85
Applications	100	149	81
Financial Assistance	$378 000	$602 000	$303 000
Tonnes	13 200	21 800	11 700

(G) A.D.C. RANGE AND SOIL IMPROVEMENT LOAN PROGRAM

Administered By: Alberta Agricultural Development Corporation

Objective: To increase farm and ranch income by encouraging the development and improvement of land productivity.

Description: This program, established in 1973, provides an incentive interest rebate on Alberta Farm Development Loans (A.F.D.L.) for specific land development projects. Terms are according to the A.F.D.L. program with an additional incentive rebate that effectively reduces the interest rate paid for a maximum of five years. The amount of incentive will be determined from the original loan amount eligible and will be the lesser of:

i - seven percent or

ii - one-half the aggregate of 1 percent and the average A.D.C. prime* rate as determined on the 1st day of every month during the period of one year in respect of which the incentive is payable.

The maximum loan available is $10 000 per individual farm. For partnerships, $10 000 for the first family and $5 000 for each additional family to a maximum of $20 000.

Specific uses permitted under this program include: brushing and/or breaking previously uncultivated land for agricultural purposes; seeding pasture and hay lands to suitable tame species; purchase and application of lime or marl to reduce soil acidity; deep plowing solonetzic soils; drainage of small depressional areas, land levelling to facilitate irrigation and improvement of water supply in pastures, and the construction of dugouts. Dugouts eligible for assistance under the Prairie Farm Rehabilitation Administration program are not eligible for assistance under this program.

*A.D.C. Prime is equivalent to the prime rate in effect at a Canadian Chartered Bank.

Relationship to Agricultural Land Expansion/Intensification:

This program is specifically designed to encourage a wide variety of land development options (see the specific uses as described above).

Program Size: In 1984-85, 376 new applications were approved for loans worth $2.7 million and 873 farmers received a total of $429 000 in incentive payments.

(H) AGRICULTURAL FLOOD CONTROL PROGRAM

Administered By: Community and Rural Services Branch, Alberta Agriculture

Objective: Joint program to control flooding of agricultural lands by beaver.

Description: Established in 1977-78 to control flooding of agricultural lands due to beaver activity and modified in 1984 to include flooding from other causes. Secondary on-farm flooding problems such as silting of drainage channels, growth of weeds or trees choking drains; soil drifting or erosion blocking water courses may also be considered.

Grants to individual Agriculture Service Boards vary according to need but usually do not exceed $12 000. Sixty percent of approved expenditures may be claimed from provincial grant allocation. Forty percent is paid by the municipality or by the landowner.

Programs for beaver flood control are subject to approval by Fish and Wildlife Division personnel (who are responsible for issuing damage permits). The fund may also be used to hire beaver trappers.

Relationship to Agricultural Land Expansion/Intensification:

This program is designed to reduce the loss of agriculturally productive lands by controlling problem beaver populations and other sources of flooding.

Program Size: In 1984-85, $305 614 worth of grants were allocated to 42 participating Agricultural Service Boards.

(I) SOIL CONSERVATION AREA PROGRAM (S.C.A.P.)

Administered By: Conservation and Development Branch, and Rural Services Branch, Alberta Agriculture

Objective: To prevent or control soil erosion and soil salinity.

Description: This program, established in 1972, provides cost-sharing grants (maximum of 60 percent) to Agricultural Service Boards undertaking programs that relate to:

a. Soil erosion: projects that prevent or control soil erosion by wind or water and reclaim or return to production affected lands.

b. Soil salinity: projects that decrease salinity levels, increase production on affected lands and minimize further spread of soil salinity.

The cost-sharing applies to all expenditures for a project including surveys, earth moving, construction of drop structures, supplies, transport of heavy equipment and forage seed. The demonstration aspect is emphasized.

Relationship to Agricultural Land Expansion/Intensification:

The program is designed to prevent or control soil erosion and soil salinity. Projects can serve as demonstrations of good management for control and prevention practices.

Program Size: Grant allocations 1985-86

a. Soil Erosion	$177 703
b. Soil Salinity	29 445
	$207 148

Additional funding will be made available during 1985-86 for conservation and development activities carried out by Agricultural Service Boards (See next page).

(J) AGRICULTURAL SERVICE BOARD
CONSERVATION AND DEVELOPMENT ACTIVITIES

Administered By: Conservation and Development Branch, and Rural Services Branch, Alberta Agriculture

Objective: To develop, promote and extend technology in the conservation and development of soil and water resources to prevent and control soil degradation and enhance the productivity and economic viability of agricultural producers.

Description: This program, established in 1985, provides cost-sharing grants (maximum of 60 percent) to Agricultural Service Boards undertaking programs that relate to:

a. Soil Conservation Act Enforcement
b. Identification and Mapping - Erosion and Salinity Inventories
c. Demonstrations, Tours and Field Days
d. Awareness, Education and Training Programs
e. Research Programs
f. Equipment
g. Project Documentation and Planning - Field Supervision and Project Follow-up.

These activities, which can be cost-shared, are in addition to the Soil Conservation Area Program and Farmland Development and Reclamation Program referred to as separate programs. Many Agricultural Service Boards carry these out as a regular part of their responsibilities and do not apply for special funding.

Relationship to Agricultural Land Expansion/Intensification:

This program provides awareness, education and extension information to prevent and control soil degradation, promote soil conservation and promote good on-farm water management.

Program Size: Grant Allocation for 1985-86 totalled $27 738. Additional funding will be made available during 1985-86 for conservation and development activities. These funds increase conservation and development program funding by over 50 percent. They were still not allocated to specific activity areas at the date of publication.

(K) FARMLAND DEVELOPMENT AND RECLAMATION PROGRAM (F.D.R.P.)

Administered By: Conservation and Development Branch, and Rural Services Branch, Alberta Agriculture

Objective: To improve the productivity of farmland, to reclaim land affected by nuisance waterbodies, and to provide water on farms for domestic, livestock, supplemental irrigation and other purposes.

Description: This program, established in 1985, provides cost-sharing grants (maximum of 60 percent) to Agricultural Service Boards undertaking programs that relate to:

a. Water/Slough Consolidation: projects that consolidate nuisance waterbodies on-farm into storage ponds or reservoirs to improve field operations, increase productive land area and/or provide water for livestock, domestic, supplemental irrigation or other purposes.
b. On-farm Drainage and Channel Improvements: projects that drain nuisance waterbodies and/or wetlands such as peat bogs and sedge bogs so that land is reclaimed for production, or to improve or clean on-farm waterways and channels to reclaim waterlogged or flooded areas.

The cost-sharing applies to all expenditures incurred by a project including surveys, design, earth moving, construction of drop structures, subsurface drains, supplies, transport of heavy equipment, and forage seed. The demonstration aspect of projects is also emphasized.

Relationship to Agricultural Land Expansion/Intensification:

The program is designed to improve the productivity of farmland to reclaim land affected by nuisance waterbodies, and to provide water on farms. Projects can serve as demonstrations of good on-farm water management practices.

Program Size: Grant Allocations 1985-86

a. Water/Slough Consolidation	$20 646
b. On-Farm Drainage and Channel Improvements	69 135
	$89 781

Additional funding will be made available during 1985-86 for conservation and development activities carried out by Agricultural Service Boards.

(L) CONSTRUCTION OF DAMS AND DUGOUTS PROGRAMS (WATER DEVELOPMENT)

Administered By: Special Areas Board, Municipal Affairs

Objective: To improve water management and development in the Special Areas for livestock.

Description: This program was initiated in 1960. The Special Areas provide a grant for 25 percent of lessee costs for dams and dugouts. The lessee can also receive grants from the Provincial Department of Agriculture and the Federal Government (Prairie Farm Rehabilitation Administration).

Relationship to Agricultural Land Expansion/Intensification:

This program supports intensified use of grazing lands in the Special Areas.

Program Size: In 1984, 42 leases were approved for development. Grants totalled $15 266.

(M) REGRASSING PROGRAM

Administered By: Special Areas Board, Municipal Affairs

Objective: To increase forage productivity on grazing leases in the Special Areas.

Description: This is on ongoing program that was initiated in 1953. The Special Areas buy grass seed at half price and allow up to six years of summerfallow or crop production to prepare a proper seed bed. Grass seed drills are available for rental through the Agricultural Service Boards at $2 per acre which allows the lessee to seed grass seed in alternate rows.

Relationship to Agricultural Land Expansion/Intensification:

The productivity of grazing lands in the Special Areas is increased.

Program Size: In 1984, 108 permits affecting 13 889 acres were approved.

(N) ALBERTA FARM WATER GRANT PROGRAM

Administered By: Municipal Utilities Division, Utilities and Telecommunications

Objective: To assist farmers and ranchers who are encountering water shortages for domestic and stock-watering purposes.

Description: A three year program, initiated in 1985, provides financial assistance for construction of water transmission facilities for domestic and stock-watering purposes. This program complements both Alberta Environment's drought emergency water supply program and Alberta's farm water assistance program by getting the water from the source (river, stream, developed well) to its point of use (dugout or cistern).

The province will cost-share with producers on a 75/25 basis. The funding limit will be based on $20 000 per serviced farm unit ($15 000 government sources - $5 000 owner). Funding from other government sources including Prairie Farm Rehabilitation Administration (P.F.R.A.), will be applied towards the provincial contribution, thus maintaining the owner's 25 percent responsibility.

Relationship to Agricultural Land Expansion/Intensification:

Ensures a secure water supply for the future water requirements of agricultural development.

Program Size: $16 million has been allocated for this three year program.

FINANCIAL SUPPORT PROGRAMS

(ii) Loan Programs

(O) A.D.C. BEGINNING FARMER LOAN PROGRAM

Administered By: Alberta Agricultural Development Corporation

Objective: To assist qualified farmers with farm experience and/or adequate education to establish a viable farming operation.

Established in 1973 to provide long-term mortgage financing for persons initiating a farming operation. This direct loan program is the exception to all other A.D.C. lending programs in that the Beginning Farmer Program is a "lender of the first resort".

Loans may be drawn down in as many as three stages over six years. Maximum assistance equals $200 000 or $600 000 for partnerships or corporations (based on $200 000 per family). Assistance takes the form of: A.D.C. preferred interest rate loans; 100 percent financing; five year renewable mortgages, 30-year amortization periods, and interest incentives of 6 percent for the first five years. Additional interest incentives are provided to those people whose initial incentive period will expire prior to April 1, 1987. This incentive will reduce the interest rate to 9 percent for two additional years.

Maximum proforma net worth and asset restrictions apply. Applicants must not have previously farmed a viable farm with an owned land base. Once a farmer has received a beginning farmer loan, he is no longer eligible to reapply under this program.

Relationship to Agricultural Land Expansion/Intensification:

While the major use of this program is the purchase of capital assets, it also provides financing for major on-farm improvement and development projects.

Program Size: In 1984-85, 896 applications were approved for a total of $109.1 million. Seven hundred and fifteen (715) loans, totalling $95.1 million, were approved for land purchases and improvements. Five thousand, nine hundred and sixty-six (5 966) farmers received $37.1 million in incentive interest rebates during 1984-85. Approximately 80 percent of all beginning farmer lending activity is used for the acquisition of land or making permanent improvements, and it is estimated that two percent of land acquisitions are directed towards "new" land purchases.

(P) A.D.C. DIRECT FARM LOAN PROGRAM

Administered By: Alberta Agricultural Development Corporation

Objective: To assist primary producers in the development and maintenance of viable farming operations (as a lender of last resort).

Description: Established in 1973 to provide long-term mortgage financing for purchasing lands, making permanent improvements to increase the productive value or any other purposes approved by the A.D.C. related to the establishment or maintenance of a family farming unit.

The program is separated into Part A and Part B loans based on the application's proforma assets and net worth. Individuals with proforma assets less than $450 000 and proforma net worth less than $225 000 qualify under Part A; individuals with assets and net worth in excess of the previously noted values qualify under Part B. Part A loans are at the Corporation's preferred lending rate less 3 percent for the first five year term. Part B loans are made at the A.D.C.'s preferred rate. In 1984, the Corporation's preferred lending rate was 12 percent. Part A borrowers whose incentive period expires prior to April 1, 1987 will have their interest rate reduced to 9 percent for two additional years.

Maximum assistance equals $200 000 or $600 000 for partnerships or corporations (based on $200 000 per family); 30-year amortization period; five year renewable mortgages. Applicants with full-time off-farm employment, as defined by A.D.C., will not qualify for funding under this program.

Relationship to Agricultural Land Expansion/Intensification:

This program provides long-term, low-interest mortgage financing for major on-farm improvements, development projects and land purchases.

Program Size: In 1984-85, 76 loans were approved for $7.5 million. Thirty-two (32) loans, totalling $3.7 million, were approved for land purchases and improvement.

(Q) A.D.C. ALBERTA FARM DEVELOPMENT LOAN (A.F.D.L.) GUARANTEES

Administered By: Alberta Agricultural Development Corporation and approved lending institutions (Chartered Banks, Treasury Branches, Credit Unions)

Objective: To assist primary producers in maintaining or improving productivity by securing short- and intermediate-term financing from approved lending institutions.

Description: This program established in 1973 provides loan guarantees for any purpose associated with primary production, except debt consolidation. As well as loan guarantees, a number of specialized incentive programs are also available.

Loans may be made to a maximum of $100 000 for a term not exceeding 15 years. Interest rates equal the lenders' prime rate plus a maximum of one percent for loans payable in less than 10 years, or the preferred rate plus one and one-half percent for loans payable in more than 10 years. Benefits derived from this program are the savings in interest realized by the borrower's access to preferred lending rates over the term of the loan.

Relationship to Agricultural Land Expansion/Intensification:

As well as providing financing for the purchase of capital assets, funds are also available for on-farm land improvement and development projects, equipment, livestock, operating capital, major repairs and consolidating farm-related trade accounts payable.

Program Size: In 1984-85, a total of 5 563 applications were approved for $80.7 million and 1 644 farmers received $914 467 in incentive payments. Under the A.D.C. Range and Soil Improvement Incentive Sub-Program, 376 of these applications were approved for $2.7 million.

(R) A.D.C. SPECIFIC GUARANTEED FARM-LOAN PROGRAM

Administered By: Alberta Agricultural Development Corporation (ADC)

Objective: To assist primary producers in developing or maintaining viable farms by providing 100 percent guarantees for financing obtained from approved lenders (Chartered Banks, Treasury Branches and Credit Unions).

Description: Established in 1974 to enable primary producers who cannot obtain financing due to a lender's normal regulations regarding term, security, risk and/or the amount exceeds the limit allowed under the Alberta Farm Development Loan. This program may be used for any purpose associated with primary production or agri-business including debt consolidation. As loan limits are determined by individual projects' purpose and feasibility, this program has the potential to be adapted to a wide variety of agricultural expansion/intensification alternatives.

The Alberta Development Corporation provides a 100 percent guarantee to the selected lender. Interest rates for this short/intermediate financing are a maximum of the lenders' prime plus one percent for loans up to 10 years or prime plus one and one-half percent for loans between 10 and 15 years. Benefits derived from this program are the interest savings realized by the borrower through securing lower interest rate loans and reduced security requirements and longer loan terms.

This program is broader in scope than the Alberta Farm Development Loans program.

Relationship to Agricultural Land Expansion/Intensification:

This program can provide intermediate term financing for land development/intensification projects but to date has seldom been used for these purposes.

Program Size: In 1984-85, a total of 75 guarantees were approved for $6.4 million. Seven of these applications, totalling $800 000, were approved for land-related purchases.

(S) FARM CREDIT CORPORATION

Administered By: Farm Credit Corporation (F.C.C.)

Objective: Provide financial services to enable Canadian farmers to establish, develop and maintain sound farm enterprises through the use of long-term mortgage credit.

Description: The F.C.C. was established in 1959 as a Crown corporation reporting to Parliament through the Federal Minister of Agriculture. F.C.C. farm loans of relevance to the A.L.B. Study are provided under the Farm Credit Act and may be made to individuals or co-operative farm associations.

Long-term loans and mortgage credit may be used to purchase new lands; allow new farmers to enter agriculture; consolidate or expand farming operations; make permanent improvements; or refinance farmers in difficulty. Eligibility for F.C.C. loans is determined on the basis of repayment and farm management ability. F.C.C. loans are widely used because the corporation is a long-term lender with competitive interest rates. Loan limits equal $350 000 for one qualifying applicant and $600 000 for two or more. Borrowers may select periods of up to 30 years to repay a loan. Terms may be limited, depending on the nature of the farming enterprise and the applicant's ability to repay the loan.

Farm Credit Corporation also has a Shared Risk Mortgage which offers flexibility and minimizes the risk associated with floating interest rates. With the Shared Risk Mortgage, the borrower and lender share the cost or benefits of fluctuating interest rates. In addition, borrowers are protected by a 2¼ percent interest rate increase ceiling during the six year term of the loan.

Relationship to Agricultural Land Expansion/Intensification:

The Farm Credit Corporation program provides funding for all kinds of land development projects.

Program Size:

Loans Receivable as at March 31, 1985

	Number of Loans	Gross Amount
Farm Credit Act	15 586	$911.8 million
Farm Machinery Syndicates Act	112	$ 1.7 million

6. TECHNICAL SERVICES

(A) FARM IRRIGATION SERVICES

Administered By: Irrigation Branch, Alberta Agriculture

Objective: To assist in the implementation and maintenance of functional on-farm irrigation systems by providing advisory, planning and design information and services.

Description: Through the consultation process, this has become one of the "front-line" contacts with the irrigation farming public. Individual programs encourage the conservation of land, soil, and water resources, while assisting agricultural producers in their development of effective and efficient production enterprises. Five major programs are listed below:

1. On-farm irrigation development planning
2. On-farm drainage development planning
3. Agricultural feasibility and planning
4. Irrigation Management Advisory program
5. Extension technology transfer

Relationship to Agricultural Land Expansion/Intensification:

This program assists farmers in expanding or intensifying their irrigated acreages, reclaiming problem soils, whether they be saline and/or sodic, or areas with high water tables through the provision of professional advice and technical assistance.

Program Size: The 1985-86 annual budget totalled $1.9 million, including 55 person years. Approximately 80 percent of the manpower and resources are directed towards irrigation intensification and expansion; of this, extension/technology transfer accounts for 50 percent.

(B) LAND CONSERVATION AND DEVELOPMENT

Administered By: Conservation and Development Branch, Alberta Agriculture

Objective: To develop, promote and extend technology in the management and conservation of soil and water resources. This program particularly applies to problem soils and the effective use and control of water, in order to maintain or enhance the productive capability of these resources and increase the economic viability of the agricultural producers.

Description: This program develops and promotes management practices which maintain or enhance soil productivity; enhance the productivity of salinized, eroded, waterlogged or flooded lands; ensure the return to equal or greater capability agricultural lands disturbed by surface mining or pipeline activity; use soil and crop water technology as well as irrigation scheduling to optimize crop production.

Climate and weather monitoring is also undertaken for more effective resource use in relation to conservation, management and reclamation of soil and water for agricultural production.

Relationship to Agricultural Land Expansion/Intensification:

This program provides research and extension information to facilitate eroded and salinized land reclamation, slough consolidation, on-farm flood control, drainage, improved irrigation water application, and soil conservation practices.

Program Size: The 1985-86 annual budget totalled $1.8 million, including 41 person years. Approximately 40 percent of these resources are directed towards agriculture land expansion/intensification, exclusive of pure research and technological transfer activities.

(C) SUBSURFACE DRAINAGE

Administered By: Drainage Branch, Alberta Agriculture

Objective: To develop and promote methods and technologies to improve and reclaim irrigated and dryland soils where subsurface drainage is appropriate.

Description: This program develops subsurface drainage criteria and techniques for applying groundwater flow patterns to effectively control high water table conditions and associated salinity problems (canal seepage, salt migration and salinization).

Large scale basin studies are undertaken to study groundwater flow patterns and drainability where irrigation expansion/intensification is being considered. Delivery of related services is the responsibility of the Irrigation Branch.

Training is provided to D.A.s, Regional Engineers, Irrigation Specialists and Private Consultants (extension-type work for farmer clientele) in the areas of subsurface drainage, salinity control and groundwater investigations.

Relationship to Agricultural Land Expansion/Intensification:

This program provides research, investigative and extension services to assist in draining waterlogged soils and reclaiming salinized lands.

Program Size: The 1985-86 annual budget totalled $750 000, including 14 person years. Approximately 75 percent of these resources are directed towards agricultural land expansion/intensification; exclusive of pure research and technological transfer activities.

(D) FARM SURFACE WATER PROGRAM

Administered By: Regional Services Branch, Water Resources Administration Division, Water Resources Management Section, Alberta Environment

Objective: To provide technical assistance to farmers for drainage, flood control, erosion and consolidation of water.

Description: This program is a long standing, on-going water management effort which has provided services to farmers since the early 1960s. After application to the appropriate regional office, an inspection of the problem is carried out and if the project appears feasible, a survey, design and cost estimate of the proposed project is prepared. The initiator must then construct and finance the works and can then receive further assistance in license application and approval from the department.

Relationship to Agricultural Land Expansion/Intensification:

This program is heavily used by farmers for small-scale drainage projects either on individual farms or on small groups of neighbouring farms. As such it provides farmers with the necessary technical advice and expertise to solve their excess water problems and in many cases, allows them to increase production and their cultivated acreage.

Program Size: In 1983-84, 154 requests for assistance under this program were received across the province. No budget is allocated specifically for the program, costs fall within each regional water resources office's operating budget. A manpower component of 5-10 person years is required to administer the program.

(E) INSPECTION SERVICES PROGRAM

Administered By: Regional Services Branch, Water Resources Administration Division, Water Resources Management Services, Alberta Environment

Objectives: To provide advice to individuals, local groups, local authorities and private enterprise concerning any matter related to problems caused by surface water. Also to enforce legislation under the Water Resources Act and to investigate alleged violations of the Water Resources Act.

Description: Individuals or groups of individuals request advice by telephone, letter or in person at the appropriate regional office. Inspections are made by regional staff and appropriate advice is then given. Services of this kind have been available from the department and its predecessors since the passing of the Water Resources Act in 1931.

Relationship to Agricultural Land Expansion/Intensification:

This program is used by farmers for obtaining advice on how the surface water problems can be solved and where they can obtain financial and technical assistance. If violations of the Water Resources Act are involved, enforcement action may then be taken by the regional and/or department staff.

Program Size: No budget is allocated specifically for the program, manpower and other costs being provided within each regional water resources office's operating budget. It is estimated that in the 1985-86 fiscal year approximately nine person years were dedicated to this program. The preceding person year estimates are for professional person years only and exclude support person years.

(F) RURAL WATER DEVELOPMENT PROGRAM

Administered By: Soils Branch, Earth Sciences Division, Environmental Protection Services, Alberta Environment

Objective: This program is designed as a service to rural residents to determine the suitability of the soil to retain water at proposed dugout and small dam sites, and to determine the cause of water loss from existing sites.

Description: For a $15 service fee, up to five test holes are drilled to a depth of 20 feet to test the soils. Information is also provided to applicants on ways of minimizing or controlling water loss.

Relationship to Agricultural Land Expansion/Intensification:

This program is used primarily by farmers in the irrigated areas of the province. By providing professional advice to the farmer on dugout location, potential problems are avoided and in most cases a more reliable water supply is provided.

Program Size: Under this program 187 inspections were made in 1983-84 and 281 in 1984-85. The budget in 1984-84 was approximately $100 000. The 243 sites investigated in southern Alberta in 1984-85 indicate the need for water storage during an extremely dry year. This compares with 141 sites for the previous year. The balance of sites were in the Peace River area for both years.